IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re PATENT APPLICATION of: Gfeller et al.

SERIAL NO.: ART UNIT:

FILED: herewith EXAMINER:

TITLE: APPARATUS AND METHOD FOR DETERMINING THE QUALITY OF A DIGITAL SOUND

ATTORNEY DOCKET NO.: CH920000038US1/954-010307-US (PAR)

Assistant Commissioner of Patents
Washington, DC 20231

PRELIMINARY AMENDMENT

Dear Sir:

Prior to examination, please amend this application as follows:

IN THE CLAIMS:

12. (Amended) A selector (60; 70) having multiple channels, logic (62, 64; 72, 73, 74) for selecting a subset of said channels for further processing, and apparatus (2) associated with each of said channels for determining the quality of a digital signal (S), comprising:

a sampler (10) using clock cycles (CLK) for sampling the digital signal (S) with a number n of samples per defined pulse width, whereby $n \geq 1$;

an edge detector (20) for detecting an edge of a pulse of the sampled digital signal;

a counter (30) for counting the clock cycles between edges detected by the edge detector; and

a deviation detector (40) being able to compare the counted clock cycles (EEC) with a prestored reference-value (EEC_0) in order to provide a deviation value (RJ) as a measure for the instantaneous quality of the digital signal (S).

16. (Amended) A receiver system (80) including a channel multiplexer (70) having logic (72, 74) including a minimum-maximum detector (72) for detecting a first digital signal with best signal quality measure (PCS) and a second digital signal with second-best quality measure (DCS) and a diversity multiplexer (74) for selecting these digital signals (PCS, DCS) for further processing and a channel detector (101) for determining a pulse position that bases on the first digital signal with the best signal quality measure (PCS) and the second digital signal with the second-best signal quality measure (DCS), the apparatus comprising:

a first storage unit (102) for storing at least one symbol of the first digital signal with the best signal quality measure (PCS);

a second storage unit (104) for storing at least one symbol of the second digital signal with the second-best signal quality measure (DCS); and

a determination unit (118) comprising a probability table (110), which in case that the first and second digital signals (PCS, DCS) are received is addressed with the at least one symbol of the first digital

signal with the best signal quality measure (PCS) and the at least one symbol of the second digital signal with the second-best signal quality measure (DCS), thereby providing a value that is defined as the pulse position (DDS).

25. (Amended) A method for determining quality of a digital signal (S) comprising:

sampling the digital signal (S) with a number n of samples per defined pulse width, whereby $n \geq 1$;

detecting an edge of a pulse of the sampled digital signal;

counting the clock cycles between edges; and

comparing the counted clock cycles (EEC) with a prestored reference-value (EEC_0) in order to output a deviation value (RJ) as a measure for the instantaneous quality of the digital signal (S); and

further comprising the following steps for determining a pulse position for the digital signal (S), which is received as at least a first digital signal (PCS) and a second digital signal (DCS):

storing a probability table (110);

storing at least one symbol of the first digital signal (PCS);

storing at least one symbol of the second digital signal (DCS); and

addressing the probability table (110) with the at least one symbol of the first digital signal (PCS) and the at least one symbol of the second digital signal (DCS), thereby the probability table (110) providing a value that is defined as the pulse position (DDS).

Please add new Claim 26 as follows:

26. (New) The receiver system of Claim 16, wherein the logic (72, 74) comprises a channel quality comparator (73) for providing a control signal (ECF).

REMARKS

By amendment herein all multiple dependencies have been removed from the claims and the claims have been clarified.

Respectfully submitted,

David Aker JULY 10, 2001

David Aker, Reg. No. 29,277 Date

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MARKED UP CLAIMS

12. (Amended) A selector (60; 70) having multiple channels, logic (62, 64; 72, 73, 74) for selecting a subset of said channels for further processing, and apparatus (2) [according to one of the preceding claims] associated with each of said channels [.] for determining the quality of a digital signal (S), comprising:

a sampler (10) using clock cycles (CLK) for sampling the digital signal (S) with a number n of samples per defined pulse width, whereby $n \geq 1$;

an edge detector (20) for detecting an edge of a pulse of the sampled digital signal;

a counter (30) for counting the clock cycles between edges detected by the edge detector; and

a deviation detector (40) being able to compare the counted clock cycles (EEC) with a prestored reference-value (EEC_0) in order to provide a deviation value (RJ) as a measure for the instantaneous quality of the digital signal (S).

16. (Amended) A receiver system (80) including [comprising] a channel multiplexer (70) having logic (72, 74) having a minimum-maximum detector (72) for detecting a first digital signal with best signal quality measure (PCS) and a second digital signal with second-best quality measure (DCS) and a diversity multiplexer (74) for selecting these digital signals (PCS, DCS) for further processing [according to one of the

preceding claims 14 and 15] and a channel detector (101) for determining a pulse position that bases on the first digital signal with the best signal quality measure (PCS) and the second digital signal with the second-best signal quality measure (DCS), the apparatus comprising:

a first storage unit (102) for storing at least one symbol of the first digital signal with the best signal quality measure (PCS);

a second storage unit (104) for storing at least one symbol of the second digital signal with the second-best signal quality measure (DCS); and

a determination unit (118) comprising a probability table (110), which in case that the first and second digital signals (PCS, DCS) are received is addressed with the at least one symbol of the first digital signal with the best signal quality measure (PCS) and the at least one symbol of the second digital signal with the second-best signal quality measure (DCS), thereby providing a value that is defined as the pulse position (DDS).

25. (Amended) A [receiving] method for determining quality of a digital signal (S) comprising:

sampling the digital signal (S) with a number n of samples per defined pulse width, whereby $n \geq 1$;

detecting an edge of a pulse of the sampled digital signal;

counting the clock cycles between edges; and

comparing the counted clock cycles (EEC) with a prestored reference-value (EEC_0) in order to output a deviation value (RJ) as a measure for the instantaneous quality of the digital signal (S); and

further comprising the following steps for determining a pulse position for the digital signal (S), which is received as at least [the] a first digital signal (PCS) and [the] a second digital signal (DCS):

storing a probability table (110);

storing at least one symbol of the first digital signal (PCS);

storing at least one symbol of the second digital signal (DCS); and

addressing the probability table (110) with the at least one symbol of the first digital signal (PCS) and the at least one symbol of the second digital signal (DCS), thereby the probability table (110) providing a value that is defined as the pulse position (DDS).